



WASHINGTON STATE LEGISLATURE
Office of the State Actuary

November 4, 2005

TO: Steve Nelsen, Executive Director
LEOFF 2 Retirement Board

FROM: Marty McCaulay, FSA, EA, MAAA, Senior Pension Actuary *PMM*
Office of the State Actuary

CC: Matt Smith, FCA, EA, MAAA, State Actuary
Office of the State Actuary

**RE: Proposed Changes to the Duty-Related Death Benefit: Adding
Occupational Diseases and Indexing the \$150,000 Lump Sum Benefit**

This memo presents the results of pricing the proposed addition of occupational diseases to the causes of death considered to be in the line of duty. It addresses the allowance of all possible occupational diseases as well as limiting the improvement to only some of these diseases. This memo also addresses the addition of a 3 percent index to the existing \$150,000 lump-sum duty-related death benefit, both as a stand-alone benefit improvement and in combination with the definition change for duty-related death.

Members Impacted

The proposal to add occupational diseases to allowable causes of duty-related deaths would impact all 14,754 active members, as well as future members. We would expect it would impact about one survivor per year. The survivors of a member impacted as a result of a death from an occupational disease that would be classified as duty-related would receive a \$150,000 lump-sum payment. The annuity benefit payable to the surviving spouse or children would not be subject to the actuarial reduction for early retirement.

The addition of an index at 3 percent per year to the existing \$150,000 lump-sum duty-death benefit could likewise potentially affect any current or future active member of LEOFF 2. Our current assumed duty-related death rate is 0.0002 for all ages; or two duty-related deaths for every 10,000 active members. We expect approximately three duty-related deaths per year under our current assumptions.

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Assumptions

To estimate the cost of expanding the definition of duty-related death, we increased the duty-related death rate of 0.0002 by a range of 20 percent to 40 percent (40 percent if all occupational diseases are included and 20 percent if some occupational diseases are included).

To estimate the cost if all occupational diseases were allowable, we used an assumed duty-related death rate of 0.00028 for all ages and we would expect one additional duty-related death per year. To estimate the cost if some, but not all occupational diseases were allowable, we used an assumed duty-related death rate of 0.00024 for all ages and we would expect one additional duty related death every other year. The total number of expected deaths would not change.

In estimating the cost of the 3 percent index on the lump-sum duty-death benefit alone, we used our current assumptions. When pricing the 3 percent lump sum index in combination with the enhanced duty-related death definitions, we used the same assumptions as for the occupational diseases mentioned above.

Actuarial Determinations

Overall, the proposed benefit improvements would create fully projected and credited projected liability increases, as well as contribution rate increases for LEOFF 2 as follows (based on an assumed rate increase with an effective date of September 1, 2006):

Duty-death definition:	Current Law	All Occupational Diseases	Some Occupational Diseases	All Occupational Diseases	Some Occupational Diseases
3% Index:	Yes	No	No	Yes	Yes
Increase in Present Value of Fully Projected Benefits (in Millions)	\$0.70	\$2.45	\$1.22	\$3.42	\$2.06
Increase in Present Value of Credited Projected Benefits (in Millions)	\$0.28	\$1.47	\$0.74	\$1.86	\$1.07
Contribution Rate Increases*					
Current Members					
Employee	0.00%	0.01%	0.01%	0.01%	0.01%
Local Employer	0.00%	0.01%	0.01%	0.01%	0.01%
State	0.00%	0.00%	0.00%	0.00%	0.00%
New Entrants**					
Employee	0.00%	0.01%	0.01%	0.01%	0.01%
Employer	0.00%	0.01%	0.01%	0.01%	0.01%
State	0.00%	0.00%	0.00%	0.00%	0.00%

*For LEOFF 2, the employer pays 60 percent of the Employer/State cost and the State pays 40 percent.

**Rate change applied to future new entrant payroll and used for fiscal budget determinations only. A single supplemental rate increase, equal to the increase for current members, would apply initially for all members or employers.

Note that while the duty-related mortality assumption increase for allowing all diseases to be added was twice that of allowing for only half the diseases, the resulting contribution rate increases for both scenarios are the same due to rounding. A similar result occurs when these proposed improvements are combined with the 3 percent index on the lump-sum duty-death benefit. The table in the following section shows the fiscal cost associated with these rate increases for allowing all diseases. For allowing some diseases, the short term rate increase is estimated to be the same, but the long-term fiscal cost is assumed to be about one-half of the cost for allowing all diseases. The actual cost, with and without indexing the lump-sum duty-related death payment, will depend not only on the number of actual occupational disease deaths, but on the definition of occupational disease.

Fiscal Budget Determinations

The proposal to change the definition of duty-related deaths would result in higher contribution rates for LEOFF 2 members and local employers. As a result of the changes in the required contribution rates, the increase in funding expenditures is projected to be:

Duty-death Definition:	Current Law	All Occupational Diseases	Some Occupational Diseases	All Occupational Diseases	Some Occupational Diseases
3% Index:	Yes	No	No	Yes	Yes
Costs (in Millions):					
2006-2007					
State:					
General Fund	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Non-General Fund	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total State	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Local Government	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1
Total Employer	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1
Total Employee	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1
2007-2009					
State:					
General Fund	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Non-General Fund	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total State	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Local Government	\$0.0	\$0.2	\$0.2	\$0.2	\$0.2
Total Employer	\$0.0	\$0.2	\$0.2	\$0.2	\$0.2
Total Employee	\$0.0	\$0.2	\$0.2	\$0.2	\$0.2
2006-2031					
State:					
General Fund	\$0.0	\$2.7	\$1.4	\$2.7	\$1.4
Non-General Fund	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total State	\$0.0	\$2.7	\$1.4	\$2.7	\$1.4
Local Government	\$0.0	\$4.0	\$2.0	\$4.0	\$2.0
Total Employer	\$0.0	\$6.7	\$3.4	\$6.7	\$3.4
Total Employee	\$0.0	\$6.7	\$3.4	\$6.7	\$3.4